

Section 4

HYDROLOGY

Drainage Basin Characteristics

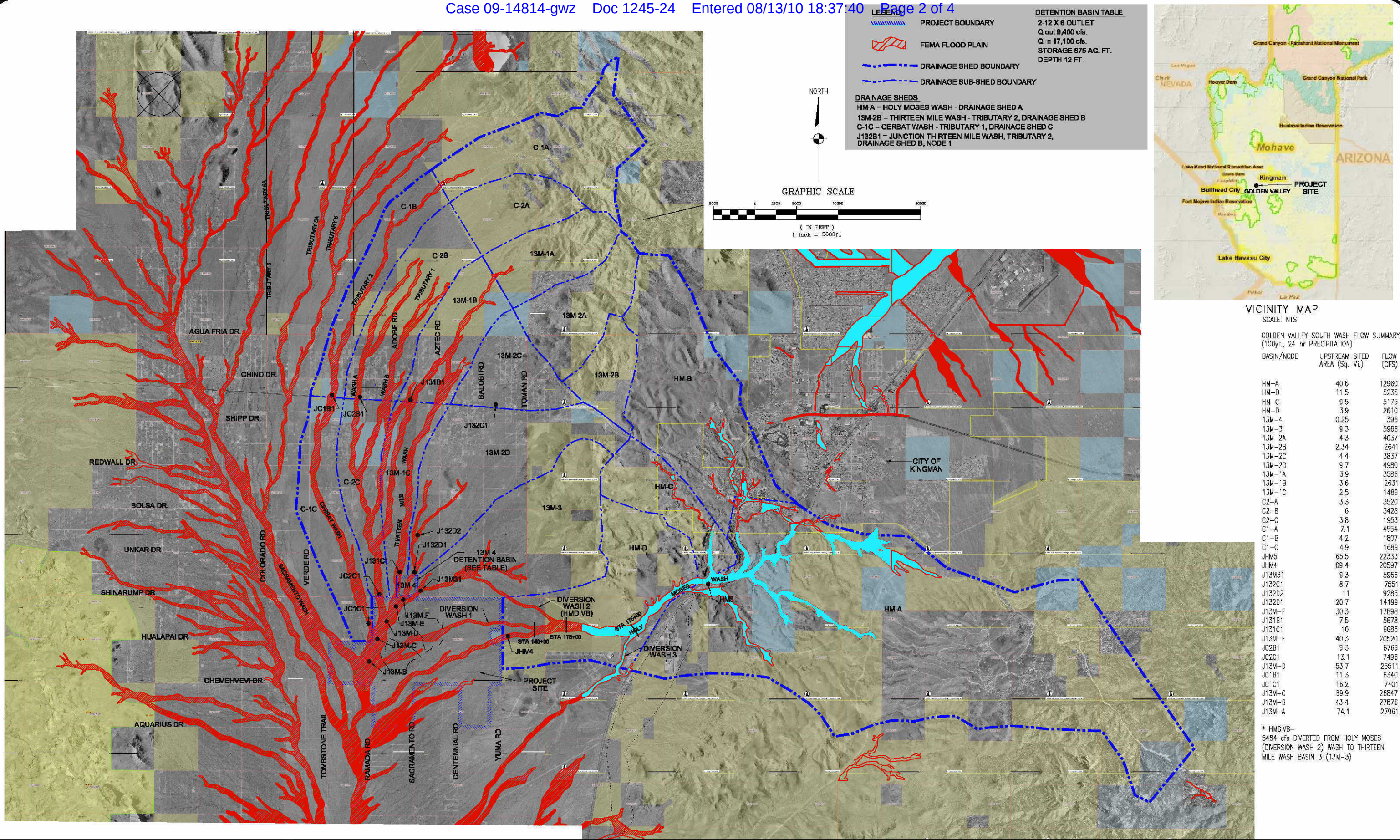
General Conditions

The project site is approximately 5,800 acres located in the Sacramento Valley, Mohave County, Arizona. The valley is bordered by the Cerbat Mountains on the east and the Black Mountains on the west. The project site is located south of US Highway 68 and west of US Highway 40. Figure 4-1 shows the general vicinity of the project in relation to Mohave County, Arizona and the drainage shed boundary.

The site is in the direct path of several large washes. Located east of the site, the Holy Moses wash diverges into four sections, one branch flows south without affecting the property and two other branches cross the site flowing east to west. The fourth branch flows northwest, crosses Aztec Road and converges with the Thirteen Mile Wash. Approaching the property from the north the Thirteen Mile Wash converges in the northwest corner of the site and flows in a southerly direction. The Cerbat Wash, located west of the Thirteen Mile Wash, joins with the Thirteen Mile Wash prior to entering the site. The Sacramento Wash crosses the southwest corner of the site and converges with the Thirteen Mile Wash and the Holy Moses Wash south of the project.

FEMA Flood Hazard Zone

According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM -Figures 4-35A&B), map numbers 040058 2325C, dated



October 20, 2000. Table 4-1 summarizes the Special Flood Hazard Zones (SFHA) within the site. These SFHA zones are described as follows:

Table 4-1 - Golden Valley Flood Zone Summary

Location			ACREAGE IN ZONE		Sum of Acres
Township	Range	Section	A	X	Grand Total
20	18	2	37.5031	566.3706	603.87
		3	85.2553	569.7779	655.03
		4	283.924	370.8773	654.80
		8	331.975	303.0097	634.98
		9	229.3796	410.8725	640.25
		10	93.0745	543.3179	636.39
		11	63.6335	564.6344	628.27
		14	4.0544	468.6927	472.75
		16	316.629	323.7024	640.33
		22	0	311.6559	311.66
		Total	1445.428	4432.911	5878.34
21	18	34	73.6196	140.7216	214.34
Grand Total			1519.048	4573.633	6092.68

Zone A

Zone A is the flood insurance rate zone that corresponds to the 100-year floodplains that are determined in the Flood Insurance Study (FIS) by approximate methods. Because detailed hydraulic analyses are not performed for such areas, no Base Flood Elevations (BFEs) or depths are shown within this zone. Mandatory flood insurance purchase requirements apply.

Zone AE and A1-A30

Zones AE and A1-A30 are the flood insurance rate zones that correspond to the 100-year floodplains that are determined in the FIS by detailed methods. In most instances, BFEs derived from the detailed hydraulic analyses are shown at selected intervals within this zone. Mandatory flood insurance purchase requirements apply.

Zone AH

Zone AH is the flood insurance rate zone that corresponds to the areas of 100-year shallow flooding with a constant water-surface elevation (usually areas of ponding) where average depths are between 1 and 3 feet. The BFEs derived from the detailed hydraulic analyses are shown at selected intervals within this zone. Mandatory flood insurance purchase requirements apply.

Zone AO

Zone AO is the flood insurance rate zone that corresponds to the areas of 100-year shallow flooding (usually sheet flow on sloping terrain) where average depths are between 1 and 3 feet. The depth should be averaged along the cross section and then

along the direction of flow to determine the extent of the zone. Average flood depths derived from the detailed hydraulic analyses are shown within this zone. In addition, alluvial fan flood hazards are shown as Zone AO on the FIRM. Mandatory flood insurance purchase requirements apply.

Zone AR

Zone AR is the flood insurance rate zone used to depict areas protected from flood hazards by flood control structures, such as a levee, that are being restored. FEMA will consider using the Zone AR designation for a community if the flood protection system has been deemed restorable by a Federal agency in consultation with a local project sponsor; a minimum level of flood protection is still provided to the community by the system; and restoration of the flood protection system is scheduled to begin within a designated time period and in accordance with a progress plan negotiated between the community and FEMA. Mandatory purchase requirements for flood insurance will apply in Zone AR, but the rate will not exceed the rate for unnumbered A zones if the structure is built in compliance with Zone AR floodplain management regulations. For floodplain management in Zone AR areas, elevation is not required for improvements to existing structures. However, for new construction, the structure must be elevated (or flood proofed for non-residential structures) such that the lowest floor, including basement, is a maximum of 3 feet above the highest adjacent existing grade if the depth of the base flood elevation (BFE) does not exceed 5 feet at the proposed development site. For infill sites, rehabilitation of existing structures, or redevelopment of previously developed areas, there is a 3 foot elevation requirement regardless of the depth of the BFE at the project site. The Zone AR designation will be removed and the restored flood control system shown as providing protection from the 1% annual chance flood on the NFIP map upon completion of the restoration project and submittal of all the necessary data to FEMA.

Zone A99

Zone A99 is the flood insurance rate zone that corresponds to areas of the 100-year floodplains that will be protected by a Federal flood protection system where construction has reached specified statutory milestones. No BFEs or depths are shown within this zone. Mandatory flood insurance purchase requirements apply.

Zone D

The Zone D designation on NFIP maps is used for areas where there are possible but undetermined flood hazards. In areas designated as Zone D, no analysis of flood hazards has been conducted. Mandatory flood insurance purchase requirements do not apply, but coverage is available. The flood insurance rates for properties in Zone D are commensurate with the uncertainty of the flood risk. Zone V Zone V is the flood insurance rate zone that corresponds to the 100-year coastal floodplains that have additional hazards associated with storm waves. Because approximate hydraulic analyses are performed for such areas, no BFEs are shown within this zone. Mandatory flood insurance purchase requirements apply.